FIG.1

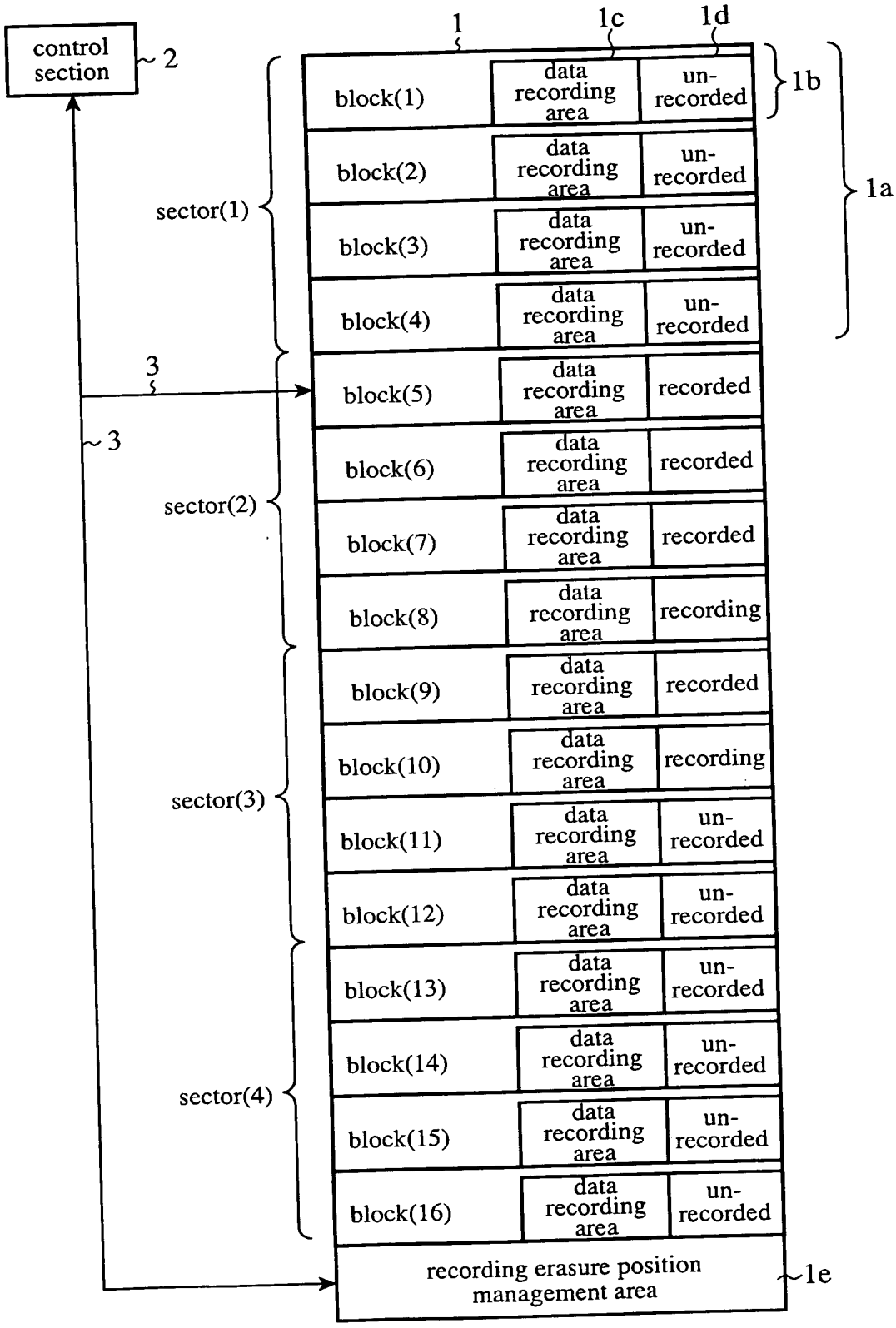

control section
2
1
1c
1d
1b
1a
block(1)
block(2)
block(3)
block(4)
block(5)
block(6)
block(7)
block(8)
block(9)
block(10)
block(11)
block(12)
block(13)
block(14)
block(15)
block(16)
data recording area
un-recorded
recorded
recording
sector(1)
sector(2)
sector(3)
sector(4)
3
3
recording erasure position management area
1e

FIG.2

11 data	12 state
111	unrecorded
011	recording
001	recorded

FIG.3

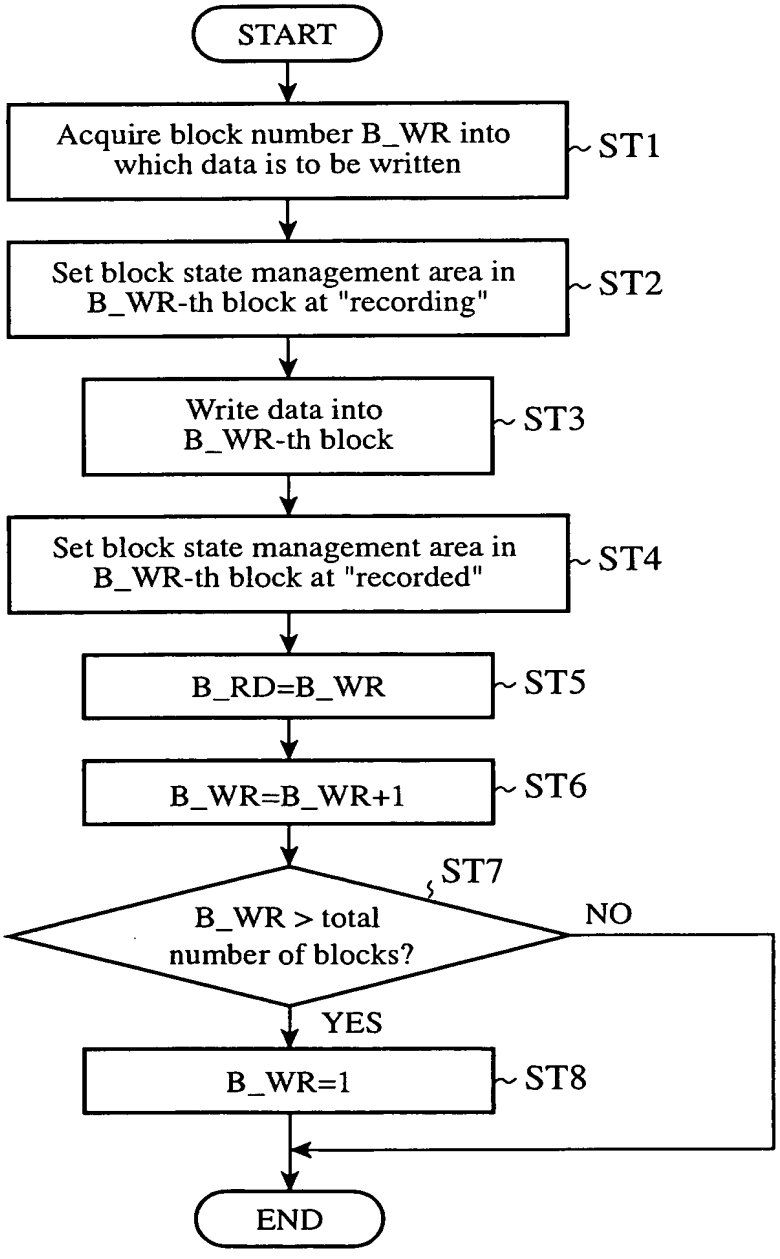


FIG.4

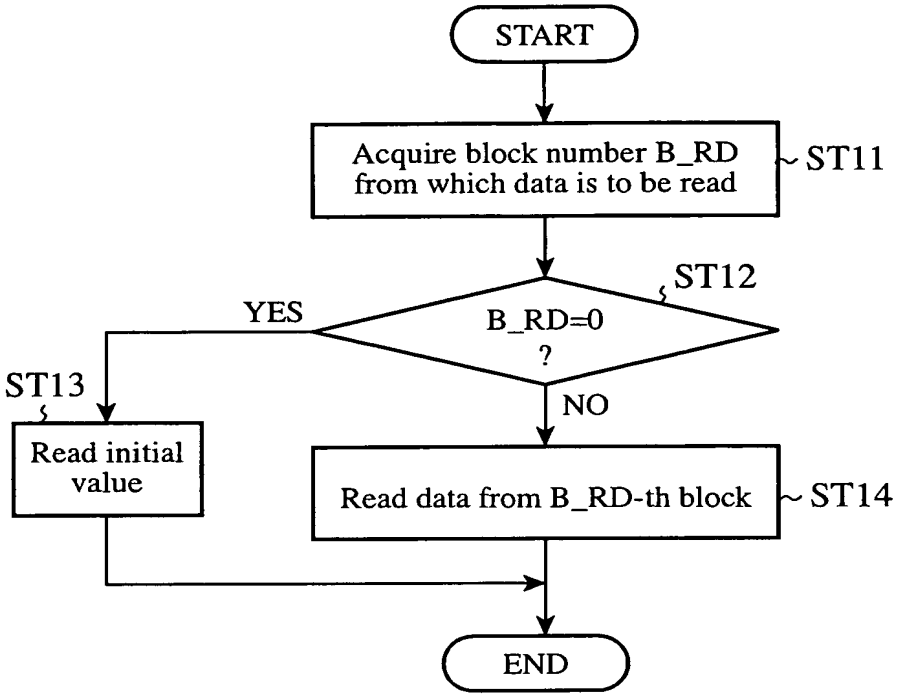

START
Acquire block number B_RD from which data is to be read
ST11
ST12
B_RD=0 ?
YES
NO
ST13
Read initial value
Read data from B_RD-th block
ST14
END

FIG.5

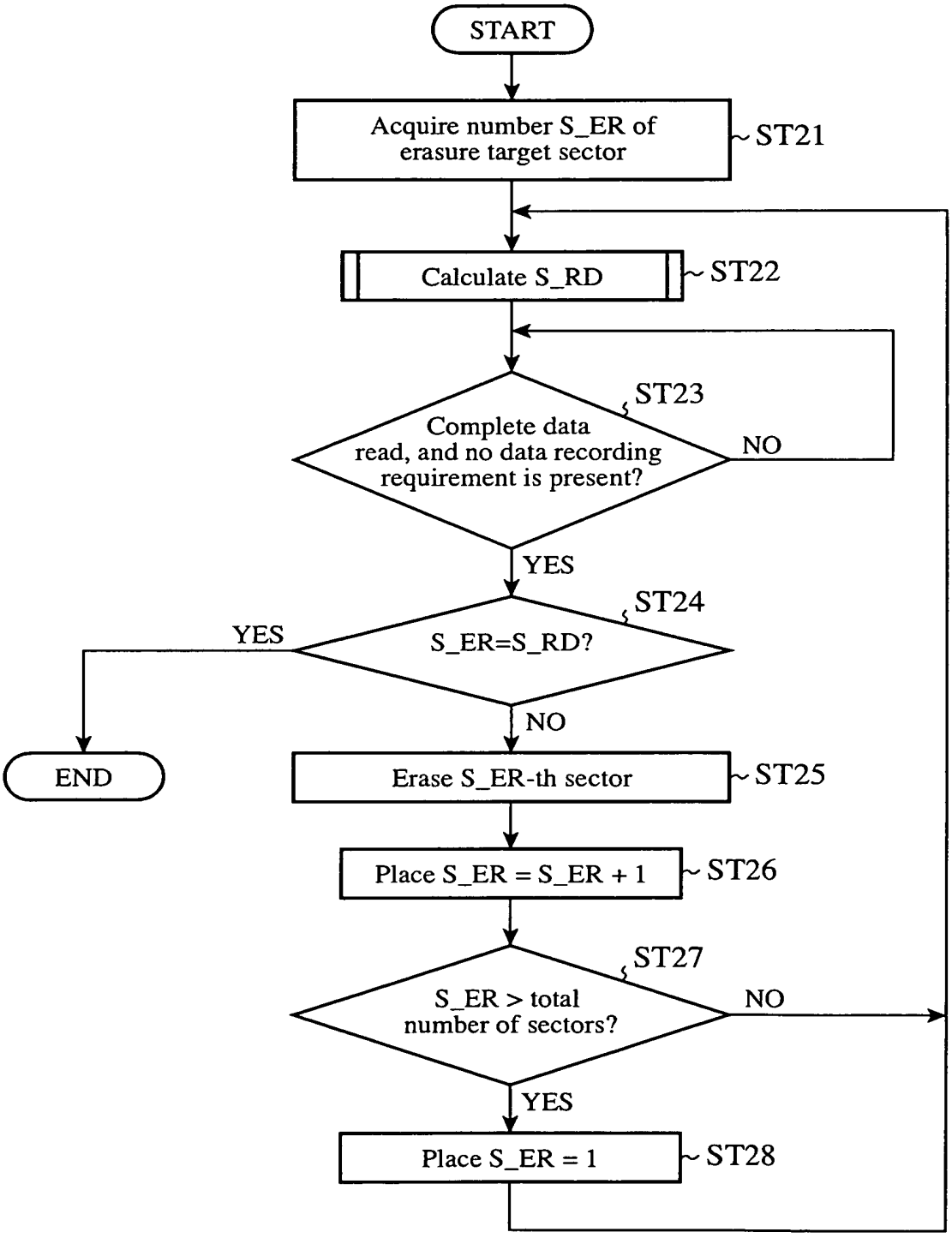

START
Acquire number S_ER of erasure target sector
ST21
Calculate S_RD
ST22
ST23
Complete data read, and no data recording requirement is present?
NO
YES
ST24
S_ER=S_RD?
YES
NO
END
Erase S_ER-th sector
ST25
Place S_ER = S_ER + 1
ST26
ST27
S_ER > total number of sectors?
NO
YES
Place S_ER = 1
ST28

FIG.6

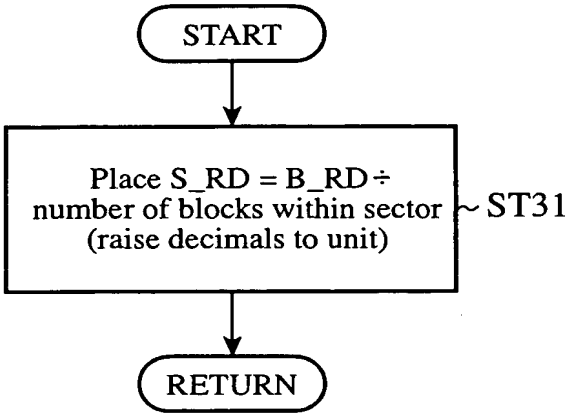

START
Place S_RD = B_RD ÷
number of blocks within sector
(raise decimals to unit)
ST31
RETURN

FIG.7

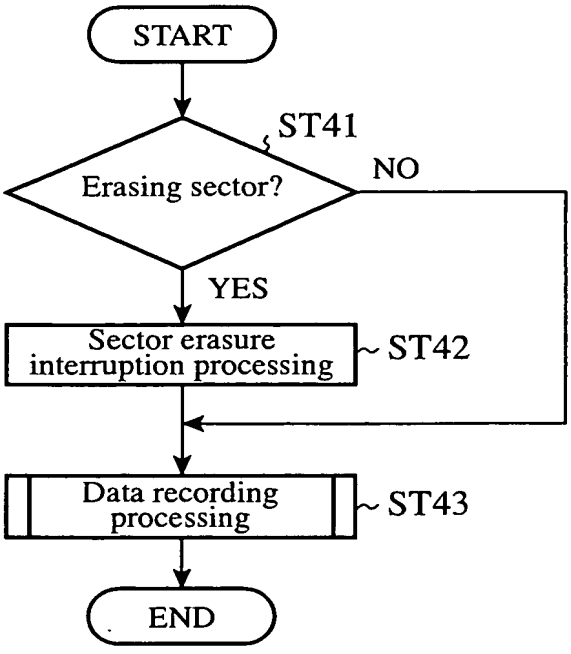

START
ST41
Erasing sector?
NO
YES
Sector erasure
interruption processing
ST42
Data recording
processing
ST43
END

FIG.8

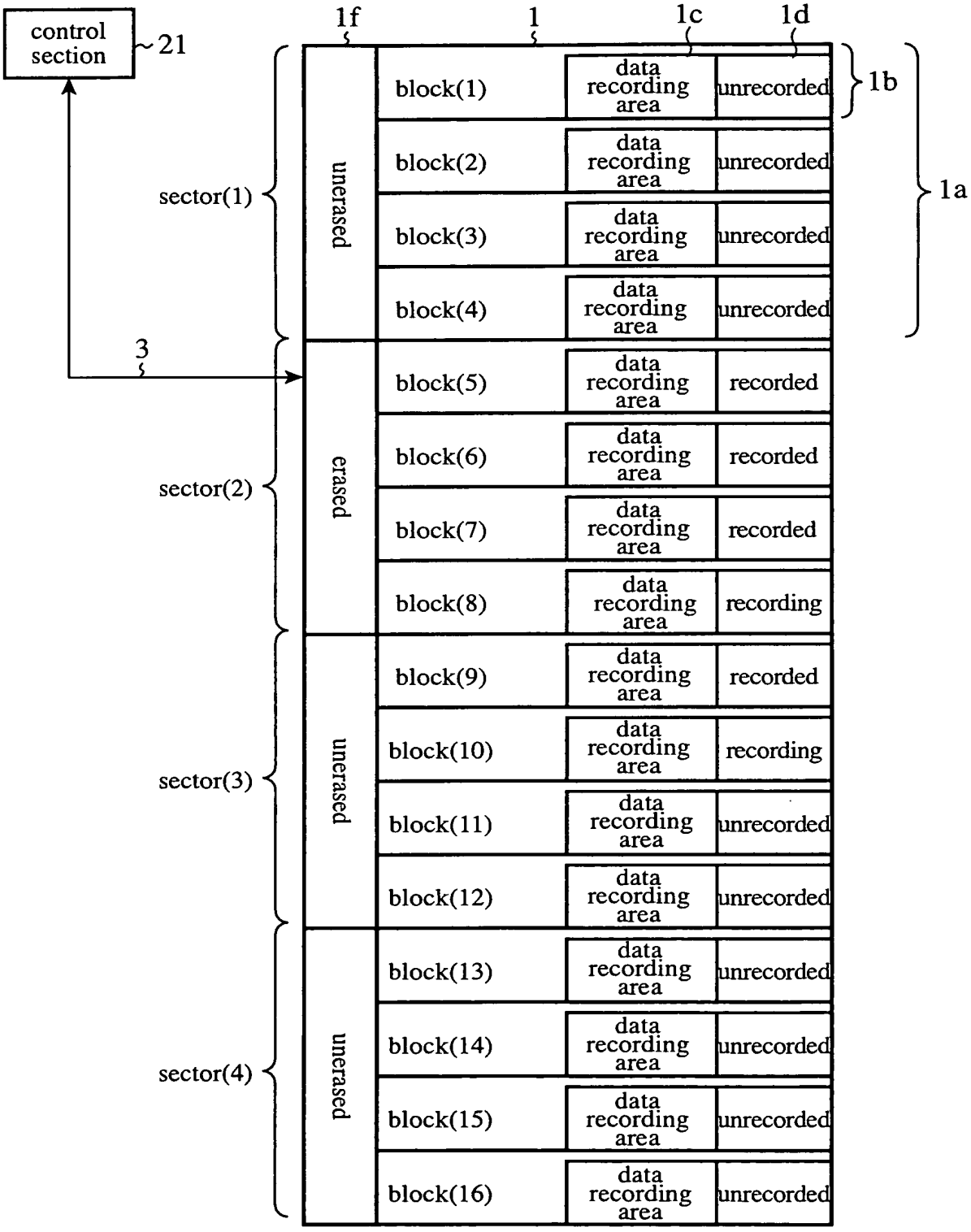

control section
21
3
1f
1
1c
1d
1b
1a
sector(1)
sector(2)
sector(3)
sector(4)
unerased
erased
unerased
unerased
block(1)
block(2)
block(3)
block(4)
block(5)
block(6)
block(7)
block(8)
block(9)
block(10)
block(11)
block(12)
block(13)
block(14)
block(15)
block(16)
data recording area
unrecorded
recorded
recording

FIG.9

31	32
data	state
111	unerased
011	erasing
001	erased

FIG.10

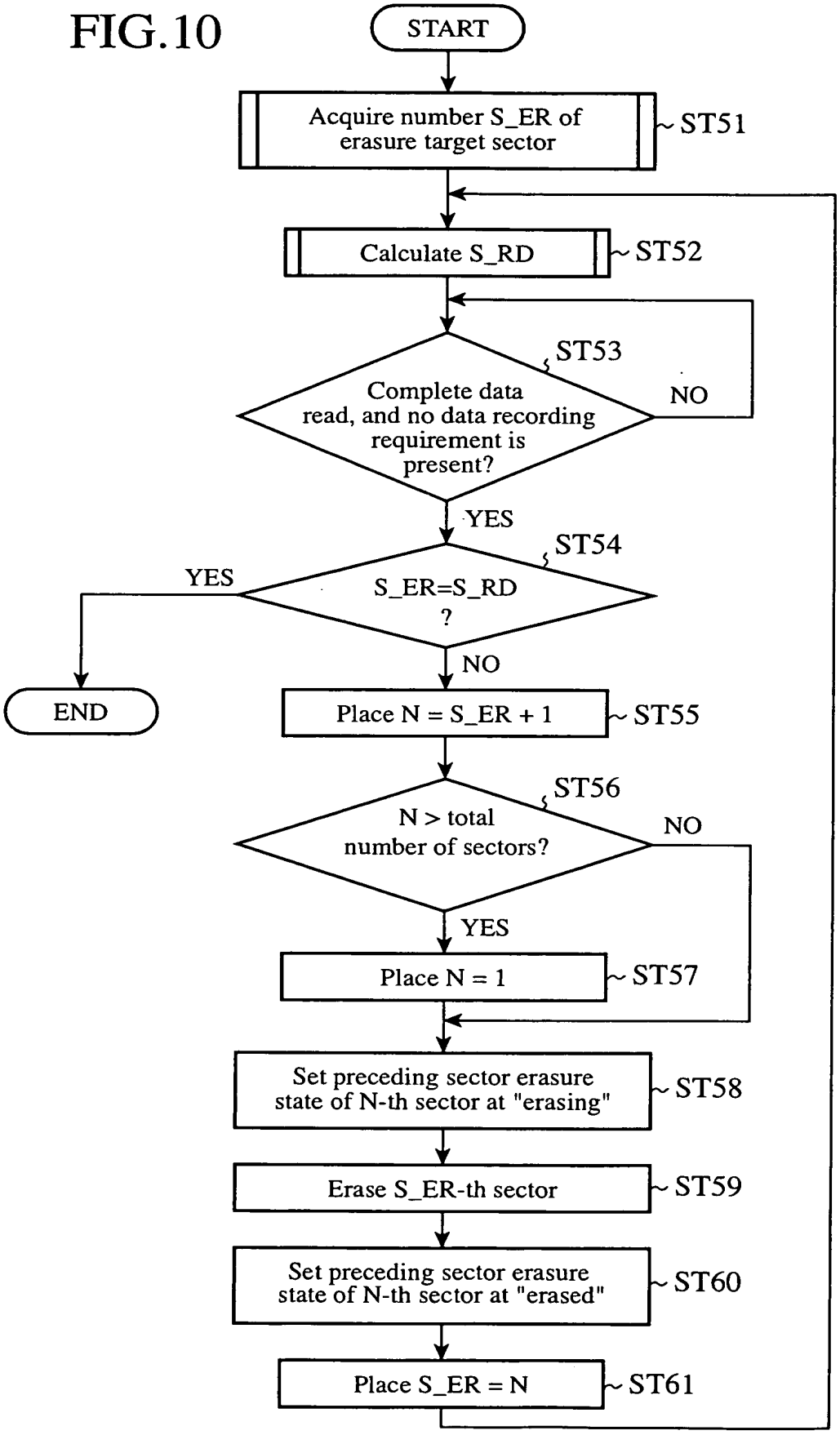

START
Acquire number S_ER of erasure target sector
ST51
Calculate S_RD
ST52
ST53
Complete data read, and no data recording requirement is present?
NO
YES
ST54
S_ER=S_RD ?
YES
NO
END
Place N = S_ER + 1
ST55
ST56
N > total number of sectors?
NO
YES
Place N = 1
ST57
Set preceding sector erasure state of N-th sector at "erasing"
ST58
Erase S_ER-th sector
ST59
Set preceding sector erasure state of N-th sector at "erased"
ST60
Place S_ER = N
ST61

FIG.11

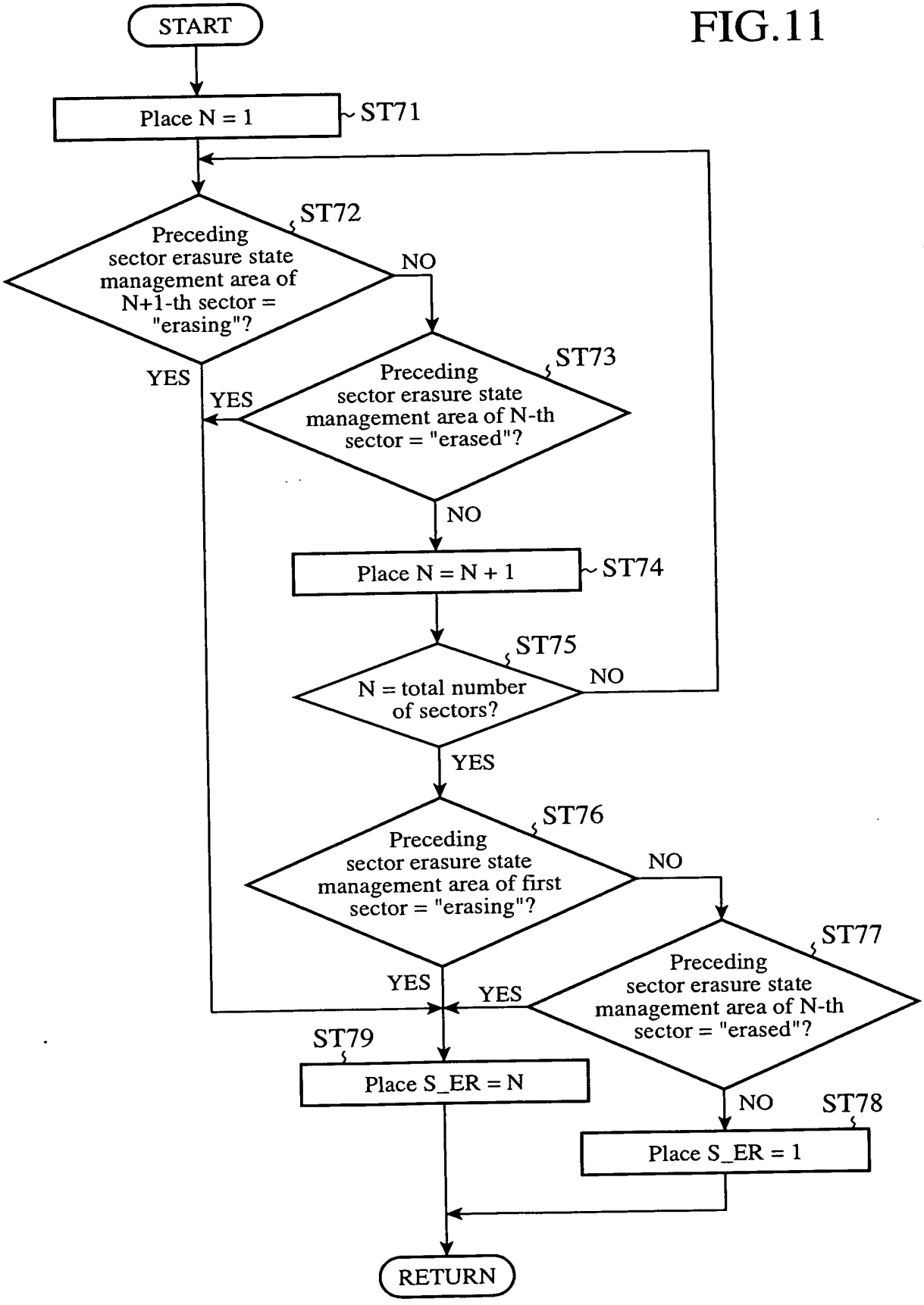

START
Place N = 1
ST71
Preceding sector erasure state management area of N+1-th sector = "erasing"?
ST72
NO
YES
YES
Preceding sector erasure state management area of N-th sector = "erased"?
ST73
NO
Place N = N + 1
ST74
N = total number of sectors?
ST75
NO
YES
Preceding sector erasure state management area of first sector = "erasing"?
ST76
NO
YES
YES
Preceding sector erasure state management area of N-th sector = "erased"?
ST77
NO
ST78
Place S_ER = 1
ST79
Place S_ER = N
RETURN

FIG.12

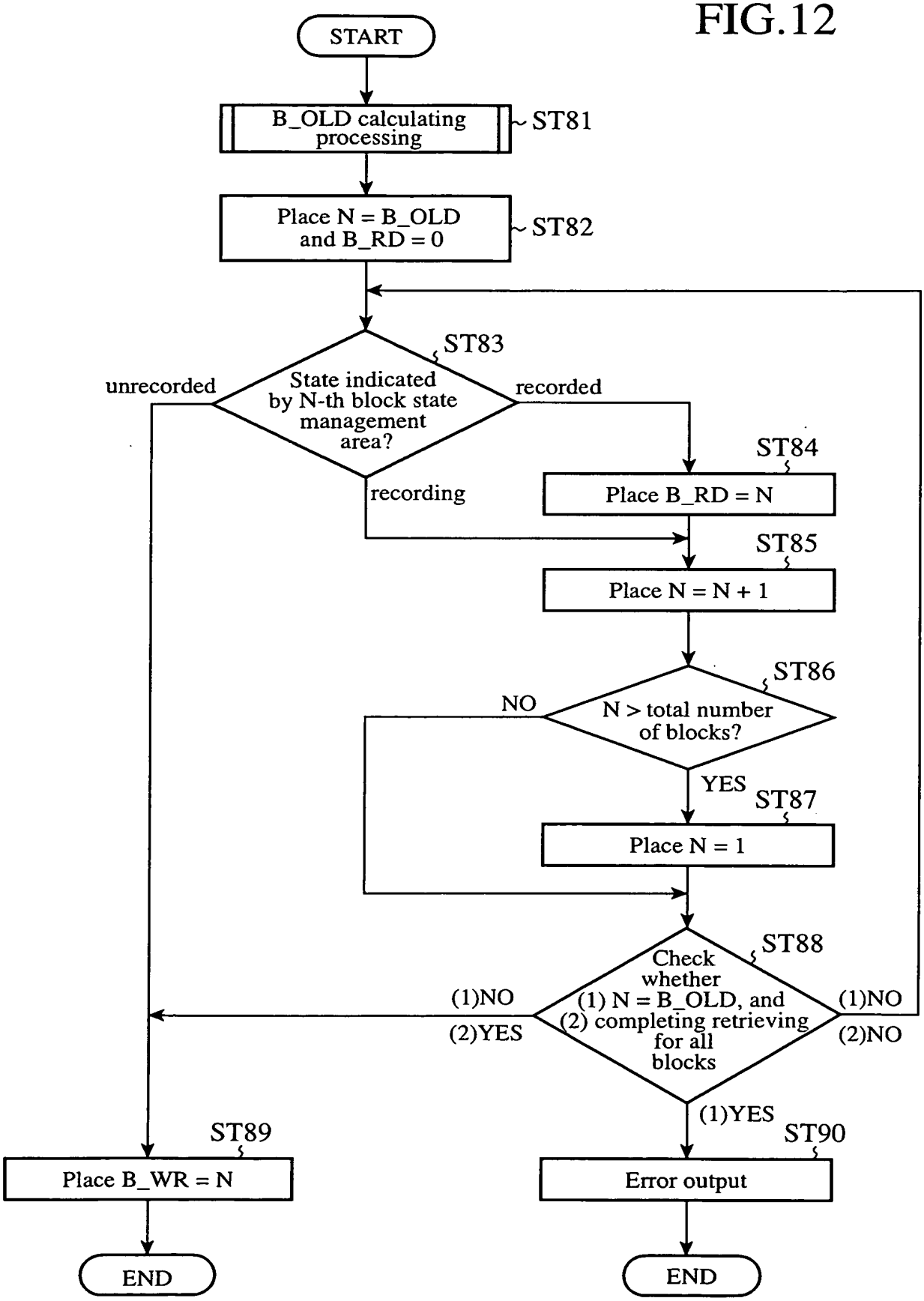

START
B_OLD calculating processing
ST81
Place N = B_OLD and B_RD = 0
ST82
ST83
State indicated by N-th block state management area?
unrecorded
recorded
recording
ST84
Place B_RD = N
ST85
Place N = N + 1
ST86
N > total number of blocks?
NO
YES
ST87
Place N = 1
ST88
Check whether (1) N = B_OLD, and (2) completing retrieving for all blocks
(1)NO
(2)YES
(1)NO
(2)NO
(1)YES
ST89
Place B_WR = N
ST90
Error output
END
END

FIG.13

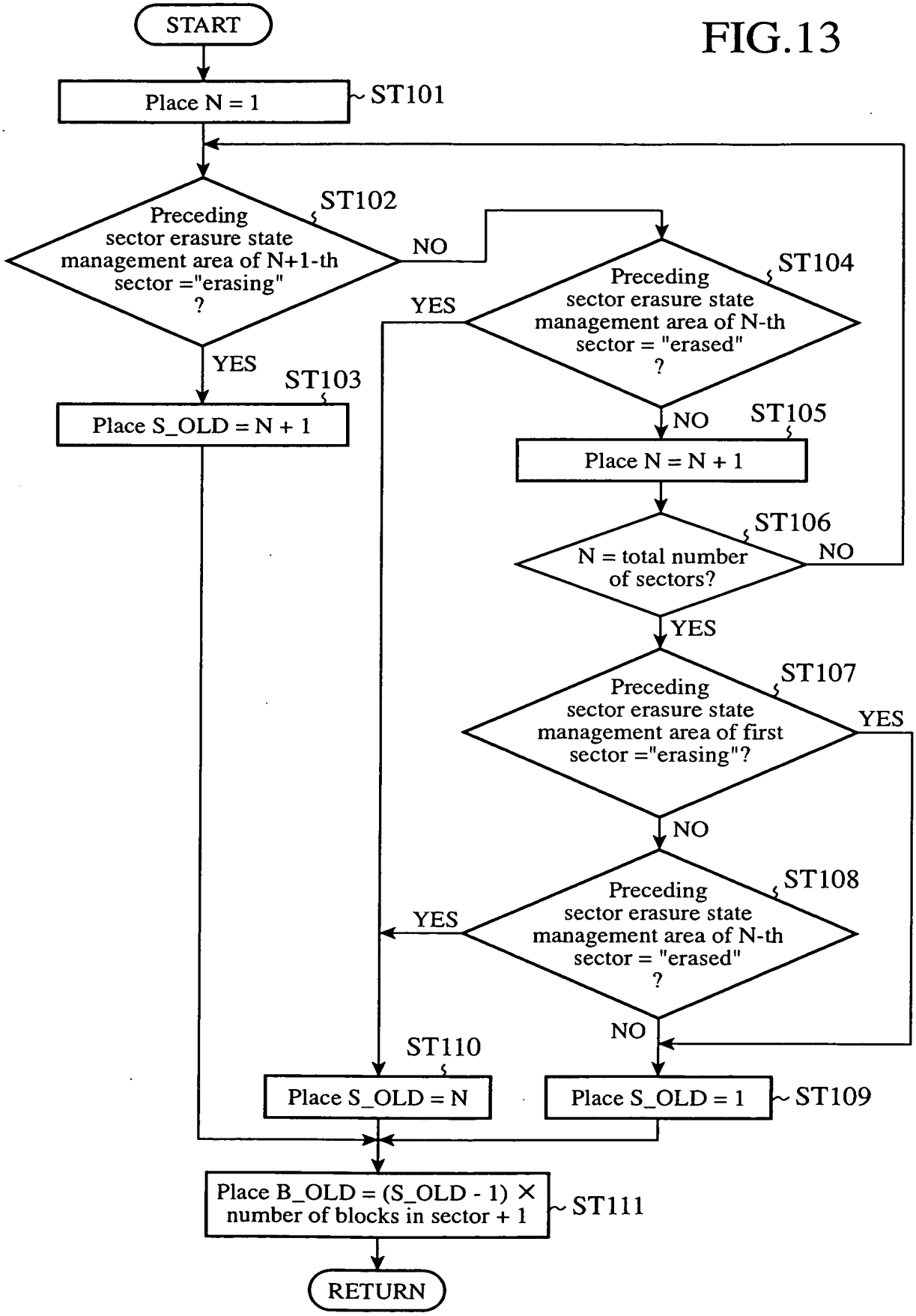
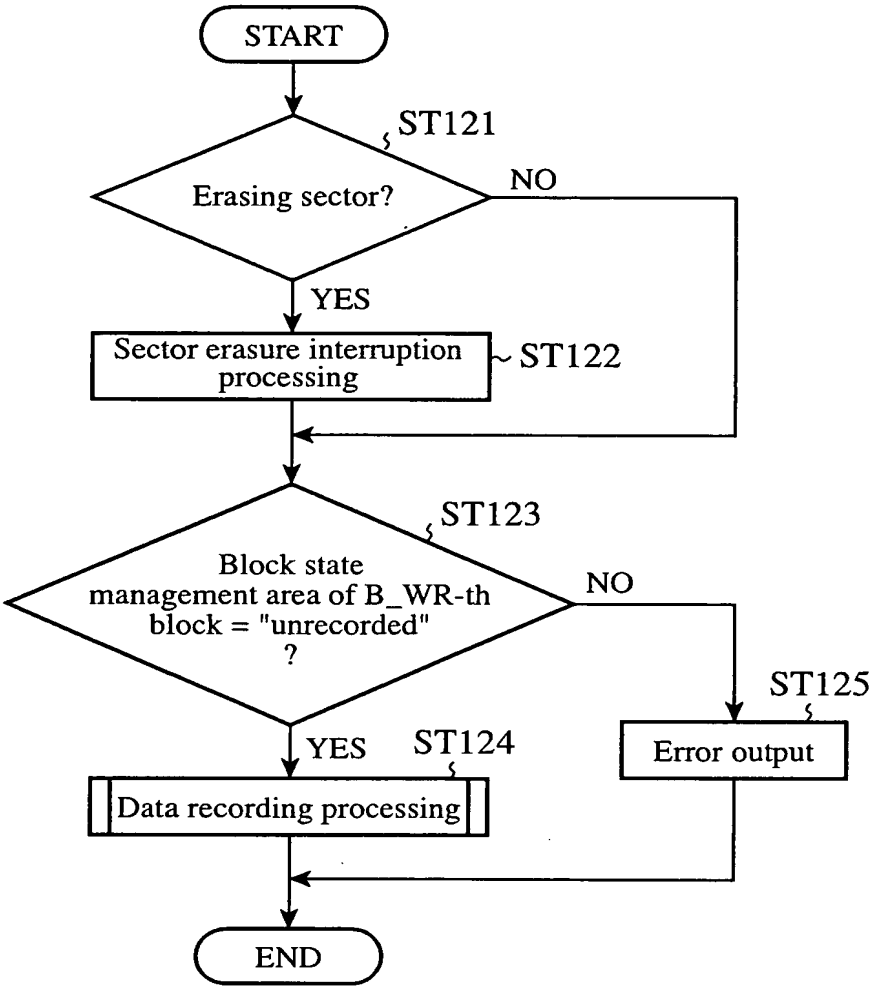

START
Place N = 1
ST101
Preceding sector erasure state management area of N+1-th sector ="erasing" ?
ST102
NO
YES
ST103
Place S_OLD = N + 1
Preceding sector erasure state management area of N-th sector = "erased" ?
ST104
YES
NO
ST105
Place N = N + 1
N = total number of sectors?
ST106
NO
YES
Preceding sector erasure state management area of first sector ="erasing"?
ST107
YES
NO
Preceding sector erasure state management area of N-th sector = "erased" ?
ST108
YES
NO
ST110
Place S_OLD = N
Place S_OLD = 1
ST109
Place B_OLD = (S_OLD - 1) × number of blocks in sector + 1
ST111
RETURN

FIG.14


START
ST121
Erasing sector?
NO
YES
Sector erasure interruption processing
ST122
ST123
Block state management area of B_WR-th block = "unrecorded" ?
NO
ST125
YES
ST124
Error output
Data recording processing
END